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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,450	11/14/2001	Martin Fuenfgeld	24564	6674

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EXAMINER
MILLER, BRANDON J

ART UNIT	PAPER NUMBER
2683	

DATE MAILED: 06/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/987,450	Applicant(s) FUENFGELD ET AL.	
	Examiner Brandon J Miller	Art Unit 2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 21 November 2000 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burger in view of Murphy.

Regarding claim 1 Burger teaches an antenna for emitting a sampled signal into a volume and for picking up an effective echo signal reflected by a volume (see col. 2, lines 16-20 and Fig. 1). Burger teaches a receiver for evaluating an echo signal supplied by an antenna (see col. 3, lines 31-33) and an antenna connected to a coupler (see col. 2, lines 12-14). Burger does not teach a transceiver unit with a transmitter for generating a sampled signal, a signal composed of an echo signal and an unwanted echo signal, a receiver that upon receiving a sample signal supplies an unwanted echo signal in proportion to a correction signal, or a coupler that heterodyne the signals so that the unwanted echo signal is cancelled. Murphy teaches a transceiver unit with a transmitter for generating a sampled signal (see col. 2, lines 40-42). Murphy also teaches a receiver for evaluating an echo signal and a signal composed of a transmit signal and an unwanted echo signal (see col. 2, lines 45-50). Murphy also teaches a receiver that upon receiving a sample signal supplies an unwanted echo signal in proportion to a replica signal and an amplifier that heterodyne the signals so that the unwanted echo signal is cancelled (see col. 2, lines 66-67, col. 3, lines 20-23 and abstract). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to make the Burger adapt to include a transceiver unit with a transmitter for generating a sampled signal, a signal composed of an echo signal and an unwanted echo signal, a receiver that upon receiving a sample signal supplies an unwanted echo signal in proportion to a correction signal, and an amplifier that heterodyne the signals so that the unwanted echo signal is cancelled because this would allow for an echo signal to be transmitted and received without the presence of undesired interference.

Regarding claim 4 Burger teaches an antenna (see col. 3, lines 30-34) and Murphy teaches a network of resistors (see col. 7, lines 17-18 and FIG.3).

Claims 2-3, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burger in view of Murphy and Talwar.

Regarding claim 2 Burger and Murphy teach a device as recited in claim 1 except a second antenna that emits into an absorber. Talwar teaches a second antenna that emits signals (see col. 1, lines 21-23) and Burger teaches an antenna that emits a signal into an absorber (see col. 4, lines 43-47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the Burger and Murphy adapt to include a second antenna that emits into an absorber because this would allow for a signal to be transmitted without having reflective properties.

Regarding claim 3 Talwar teaches two antennae of similar design (see col. 1 lines 21-23 and FIG. 1).

Regarding claim 5 Talwar teaches a power splitter for distributing sampled signals with equal power to an antenna (see col. 9, lines 55-60 and FIG. 3).

Regarding claim 6 Burger, Murphy, and Talwar teach a device as recited in claim 3 except for a power splitter for distributing power to an acquisition antenna and a simulation antenna, a power splitter for feeding power from a sampled signal to an antenna simulation and an acquisition antenna, and one antenna with a different reflectivity from another. Talwar teaches two antennae that emit signals (see col. 1, lines 21-23) and a power splitter for distributing and feeding power from a sampled signal to an antenna (see col. 11, lines 36-44). Burger teaches degrees of reflectivity (see col. 1, lines 34-35) and a reflective antenna (see col. 2, lines 19-20). It would have been obvious to make the Burger, Murphy and Talwar adapt to include a power splitter for distributing power to an acquisition antenna and a simulation antenna, a power splitter for feeding power from a sampled signal to an acquisition antenna and antenna simulation, and one antenna with different reflectivity from another because this would allow sampled signals to be sent to an antenna with equal reflective properties.

Regarding claim 7 Burger and Murphy teach a device as recited in claim 1 except for a correction signal as 180° phase quadrature to an unwanted echo signal. Talwar teaches a reference signal as a phase quadrature of an unwanted echo signal (see col. 8, lines 2-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the Burger and Murphy adapt to include a correction signal as 180° phase quadrature to an unwanted echo signal because this would allow for an undesired signal to be completely cancelled by another.

Regarding claim 8 Talwar teaches an echo signal that is a radio signal (see abstract) and Burger teaches a mixer between an antenna and a coupler for converting an echo signal to an intermediate frequency (see col. 2, lines 6-14 and col. 5, lines 3-12).

Regarding claim 9 Burger teaches a waveguide system and four connections ports (see col. 6, lines 11-14 and Fig. 2). Burger also teaches a transmitter and a receiver jointly connected to an antenna (see col. 2, lines 15-20 and Fig. 1) and lengths of wave sections, which have a frequency that is some multiple of the wavelength of a sampled signal (see col. 2, lines 45-47). Talwar teaches adjacent antennae (see col. 1, lines 20-23 and FIG. 1).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Long U.S. Patent No. 5,406,552 discloses a device and method for linear listener echo cancellation.

Groenenboom U.S. Patent No. 5,329,284 discloses a radar apparatus.

Nash U.S. Patent No. 6,397,044 discloses a transceiver.

Kawano U.S. Patent No. 5,369,782 discloses a radio relay system including interference signal cancellation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon J Miller whose telephone number is 703-305-4222. The examiner can normally be reached on Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 703-308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

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May 31, 2002

WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600